

REMARKS

In accordance with the foregoing, claims 17 and 20 are amended. Claim 21 has been cancelled without prejudice or disclaimer. Claims 1-21 are pending and under consideration.

Rejection of Claims 1, 2, 4, 8, 9, 11, 12, and 17-21 Under 35 U.S.C. § 103(a)

The Office Action rejects claims 1, 2, 4, 8, 9, 11, 12, and 17-21 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,740,853 issued to Johnson et al. (hereinafter referred to as "Johnson") in view of U.S. Patent No. 5,761,023 issued to Lue et al. (hereinafter referred to as "Lue"). This rejection is respectfully traversed.

Johnson and Lue, taken separately or in combination, do not disclose, teach, or suggest at least, "a first helium gas supply passage formed inside the base, and which emits a helium gas to the edge part of the wafer; and a second helium gas supply passage provided inside the base and offset from the first helium gas supply passage, and which emits the helium gas to the center part of the wafer," as recited in claim 1.

On pages 2-3, the Office Action asserts,

"Regarding claim 1 Johnson et al discloses an electrostatic chuck (ESC) (Abstract & Fig. 1A element 102) for a wafer (Col. 1 lines 13-15 comprising: a base on which the wafer is mountable (Fig. 1A element 170<note that the base it's the body of all the set pieces mechanically connected as a support where the wafer seats on to be processed>), a first helium gas supply passage formed inside the base, and which emits a helium gas to the edge part of the wafer (Col. 16 lines 16-19 & Fig. 10E); and a second helium gas supply passage provided inside the base and offset from the first helium gas supply passage, and which emits the helium gas to the center part of the wafer (Col. 16 lines 66-67; Col. 17 lines 1-3 & Figs. 1B, 1D elements 205, 215; Figs. 10B-10E elements 215, 360, 420).....

Lue et al. teaches ring-type sealing member at the top of the base that contact the wafer and divides it when the wafer is mounted (Col. 6 lines 24-35, Col. 9 lines 11-20 & Fig. 3 elements 72, 74, Fig. 4 elements 72, 74, 82).

Applicants respectfully traverse these assertions. As indicated above, the Office Action appears to assert that coolant outlet-inner zone 205 and coolant inlet-inner zone 215 in Figures 1B and 1D correspond to "a first helium gas supply passage formed inside the base, and which emits a helium gas to the edge part of the wafer; and a second helium gas supply passage provided inside the base and offset from the first helium gas supply passage, and which emits the helium gas to the center part of the wafer," as recited in claim 1.

Applicants respectfully submit that Johnson does not disclose coolant outlet-inner zone 205 and coolant inlet-inner zone 215 use helium gas, Instead, Figures 1B through 1D and col. 8,

lines 32-25 of Johnson discloses, "The inner ring, including notches 176 and 178, forms two conduits for the He gas outer zone 230 and the He gas-inner zone 235." Accordingly, Applicants respectfully submit that the Office Action cannot apply coolant outlet-inner zone 205 and coolant inlet-inner zone 215 to reject the claims.

Moreover, with respect to Figure 10E, Figure 10E and col. 16 line 52 through col. 17, line 18 discloses outer zone outlets 420 and inner zone inlets 430. Although the outlets 420 may emit coolant from a passage, the inlets 430 do not emit coolants from a passage. Instead, the inlets 430 provide access into passages. Based on the position of the outlets 420 in Figure 10E, the outlets 420 cannot deliver coolant to both the center part and the edge part of a wafer.

On page 3, the Office Action notes, "Johnson does not disclose the sealing elements as ring-type in direct contact and dividing the wafer when the wafer is mounted."

Applicants respectfully submit that one having ordinary skill in the art would not have been motivated to combine the Johnson's stacked configuration with the chuck 14 of Lue. For example, col. 2, lines 15-18 of Johnson discloses, "Accordingly, it is an object of the present invention to provide a wafer holder that is fabricated as a stack of at least one element, each element performing at least one wafer processing function." Therefore, one having ordinary skill in the art would not have been motivated to combine Johnson with Lue.

In addition, Lue does not disclose the first helium gas supply passage and second helium gas supply passage configuration as indicated in claim 1. Therefore, for at least these reasons, claim 1 is patentably distinguishable from the cited references.

Claims 2-16 depend from claim 1 and include all of the features of claim 1. Therefore, for at least these reasons, claims 2-16 are also patentably distinguishable from the claim 1.

With respect to claims 17 and 20, Johnson and Lue, taken separately or in combination, do not disclose, teach, or suggest at least, "wherein the cooling gas is introduced into each predetermined area synchronously with the introduction of the cooling gas into at least one other of the predetermined areas," as recited in claims 17 and 20.

Page 12 of the Office Action notes that Johnson and Lue do not disclose this feature. The Office Action asserts that Kanno discloses this feature. Applicants respectfully submit that one having ordinary skill in the art would not have motivated to combine Johnson with Lu. As with Lu, Kanno's wafer processing apparatus does not use a stack configuration as taught by Johnson.

Moreover, col. 6, lines 47-51 of Konno discloses, "Further, the fifth object can be attained by monitoring a temperature of a semiconductor wafer on processing, a temperature of a coolant flowing through a wafer stage or thermal data from a wafer stage, and controlling the status of the apparatus in accordance with thermal data." However, Kanno does not disclose, "wherein the cooling gas is introduced into each predetermined area synchronously with the introduction of the cooling gas into at least one other of the predetermined areas. Therefore, for at least these reasons, claims 17 and 20 are patentably distinguishable from the cited references.

Claims 18-19 depend from claim 17 and include all of the features of claim 17. Therefore, for at least these reasons, claims 18-19 are patentably distinguishable from the cited references.

Accordingly, withdrawal of this rejection is respectfully requested.

Rejection of Claims 3, 5-7, 10, 13-16, and 21 under 35 U.S.C. § 103(a)

The Office Action rejects claims 3, 5-7, 10, 13-16, and 21 under 35 U.S.C. § 103(a) as being unpatentable over Johnson in view of Lue and U.S. Patent No. 6,677,167 issued to Kanno et al. (hereinafter referred to as "Kanno"). This rejection is respectfully traversed.

Claim 21 is cancelled without prejudice or disclaimer.

Konno does not cure the deficiencies of Johnson and Lue.

Johnson, Lue, and Konno, taken separately or in combination, do not disclose, teach, or suggest at least, "a first helium gas supply passage formed inside the base, and which emits a helium gas to the edge part of the wafer; and a second helium gas supply passage provided inside the base and offset from the first helium gas supply passage, and which emits the helium gas to the center part of the wafer," as recited in claim 1. Therefore, for at least these reasons, claim 1 is patentably distinguishable from the cited reference.

Claims 3, 5-7, 10, and 13-16 depend from claim 1 and include all of the features of claim 1. Therefore, for at least these reasons, Claims 3, 5-7, 10, and 13-16 are also patentably distinguishable from the cited references.

Accordingly, withdrawal of this rejection is respectfully requested.

Summary

Claims 1-21 are pending and under consideration. It is respectfully submitted that none of the references taken alone or in combination disclose the present claimed invention.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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